

FAS – Office of Global Analysis (OGA)
United States Department of Agriculture (USDA)
International Operational Agriculture Monitoring Program



March Report – Week 2

March 14th, 2009

1. The current outlook for MY 2009/10 winter grain production (wheat and barley) in Iraq is similar to worse than last year's drought-affected crop. Less than adequate rainfall and/or irrigation supply during the current winter season has resulted in similarly poor or worse vegetative crop conditions than last year over large regional areas, particularly in the southern irrigated provinces. It appears that total irrigated grain area will decline in MY2009/10 and that poor yields relative to last year in some of the highest yielding irrigated crop areas will prevent a recovery in national winter grain production. Though winter grain production prospects are improved in some northern rainfed growing provinces this year, it is anticipated that production shortfalls in the south will be greater in size. Generally poor current crop conditions are expected to result in well below-normal national grain production.
2. Cumulative precipitation for MY 2009/10 is slightly higher than the previous year, but remains below normal (Figure 1). Recent rain events during late-February and early-March brought needed precipitation to the northern rainfed governorates, increasing season-to-date precipitation to near normal; particularly in Salah ad Din, At Ta'min, and portions of Arbil which cumulatively produce 22% of total wheat and 18% of total barley. Though At Ta'min has benefitted from better rainfall this year, crop development has been very poor to date. It normally produces 10 percent of the national wheat crop, and is considered one of the 5 highest producing areas in the country. Recent rain events also boosted season-to-date precipitation in Ninawa, which normally produces 20% of total wheat and 32% of total barley, but overall conditions remain below normal (Figure 2). A large storm system is also expected to bring between 10mm and 75mm throughout the northern governorates over the next few days. Rainfall accumulation over the next few weeks will be critical in determining the final outlook for crop yields in Iraq, but time is limited for a significant crop recovery.
3. Regional NDVI time-series images reveal there is much less crop vigor and abundance than the previous benchmark year of MY 2006/07, when Iraq produced a normal sized wheat crop of 2.5 million tons. As of March 6th 2009, MODIS NDVI remained especially low in the northwest and central provinces (Figure 3). A more detailed change analysis comparing the current MY 2009/10 with the previous benchmark years of MY 2005/06 and MY 2006/07 revealed significantly less vegetation abundance in the northern provinces of Ninawa, Arbil, and the central province of At Ta'min, which cumulatively produce up to 35% of total wheat and 49% of total barley. However, significant increases were apparent over most of the minor grain producing northern province of As Sulaymaniyah, which typically accounts for only 1 percent of national wheat production, but 8 percent of its barley production (Figure 4). It is likely that the positive vegetative signature currently apparent here is signaling much improved barley production prospects in this province over last year.

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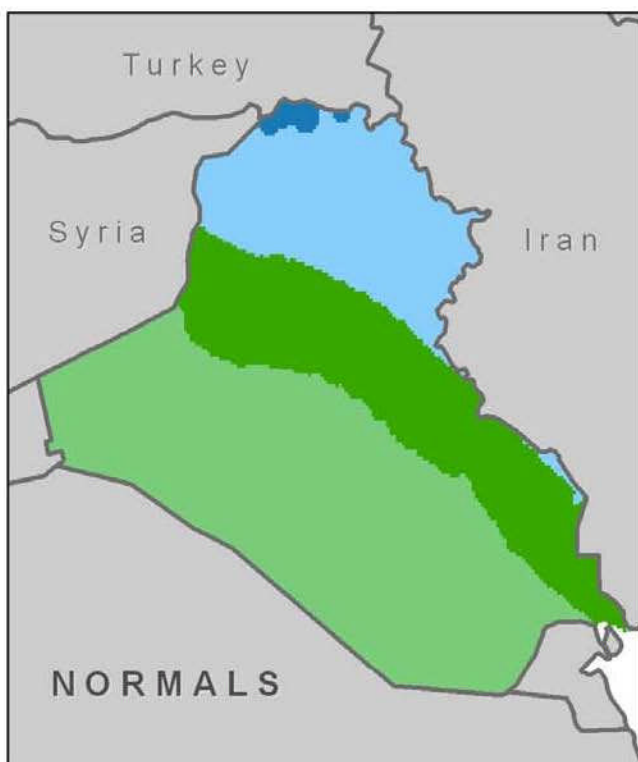
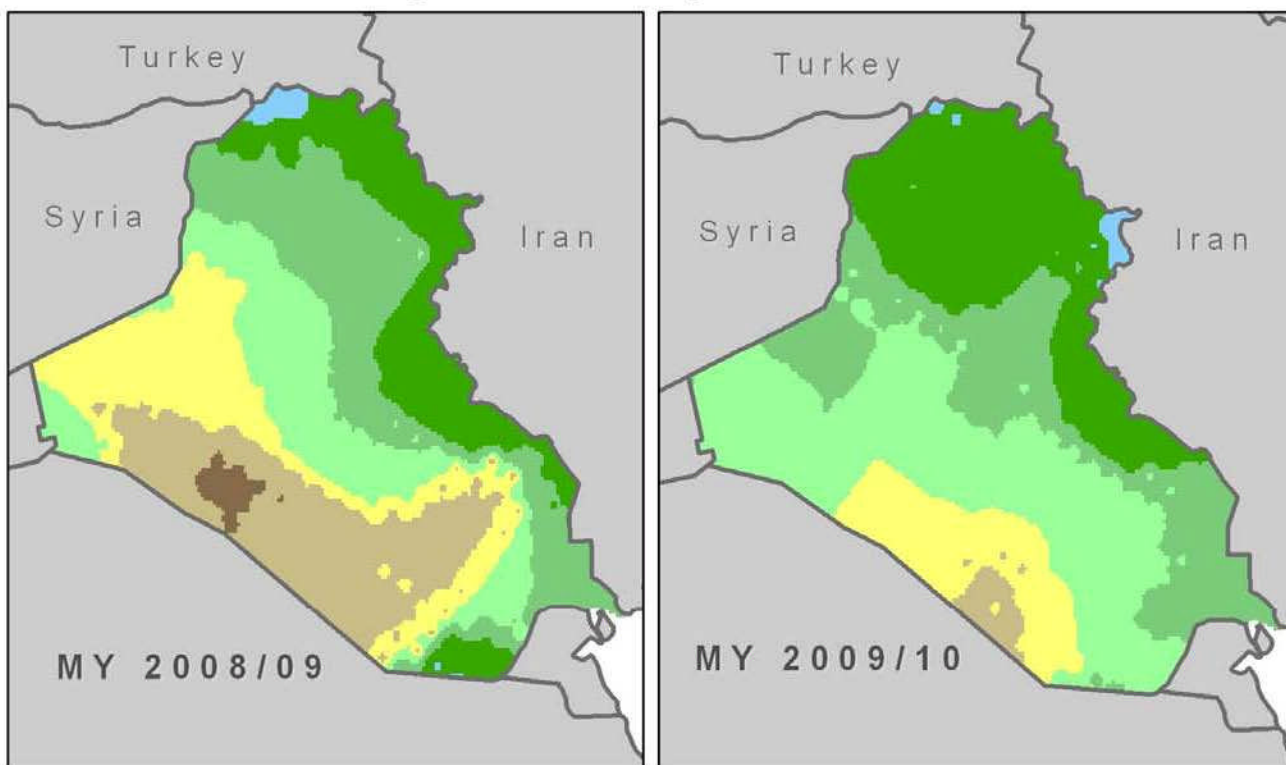
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4. MODIS NDVI for MY 2009/10 was compared with the previous year of MY 2008/09. Although many growing areas are showing modest increases from the previous year, this is mostly attributed to a slight recovery from a devastating drought season and not a return to near-normal production potential. Areas illustrating similar to worse vegetative conditions than last year's severe drought are also extremely widespread. They include all of the 5 major producing provinces (Ninawa, At Ta'min, Diyala, Wasit, and Al Qadisiyah). Ninawa is normally the nation's largest winter grain producer, and it experienced almost total crop devastation last year. The fact that most of Ninawa's grain producing areas are currently showing similarly poor vegetative development this year indicates that either crops did not get sown over widespread areas or rainfall has been well-below actual crop requirements. The most significant and unexpected grain production problems, however, appear to be occurring in primarily irrigated major crop regions in the southern provinces of Diyala, Wasit, and Al Qadisiyah (Figure 5). For as yet unknown reasons, large normally cultivated grain areas are illustrating much worse vegetative development than last year. This is possibly linked to inadequate irrigation supply or crop rotation and fallowing this year. However, the large relative spatial extent and concentration of these poor areas makes the likelihood that is involved to be very remote. Moderate resolution AWiFS imagery used to validate the coarser resolution MODIS NDVI data is limited during the current month of March. The single March acquisition covers the provinces of Al Anbar, a minor producing province, and Salah ad Din, has been showing significant improvements compared to previous years. The improvements are more common within center-pivot irrigation fields, whereas remaining rainfed cropland remains the same. Two hotspots of significant change (increase and decrease) were sampled in these provinces over several years to provide a more seasonal comparative analysis (Figure 6).

Salah ad Din typically produces 5% of total wheat and 1% of total barley and has been showing significant improvements over last year's drought reduced crop with NDVI increasing at rates similar to slightly above previous years. The crop yield prospects for Salah ad Din are currently near normal. Recent and forecasted rain events should ensure crop progression until harvest.

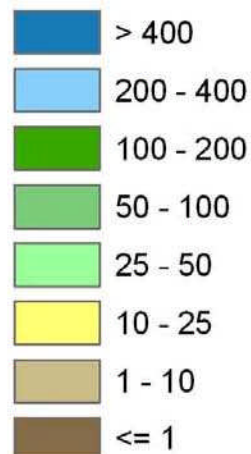
Al Anbar clearly shows a double-cropping throughout the year with a minor winter crop peaking near early-March. The most significant increases in NDVI are apparent near Ramadi and what appears to be a large irrigated area just south of Ramadi. Although current NDVI is higher than last year, the graph clearly illustrates that it remains well-below normal. Al Anbar typically produces 3% of total wheat.

Cumulative Precipitation Comparison: October to March



Legend

Cumulative Precipitation (mm)



Data Source: AFWA Precipitation
Data Provided by: AFWA
Supporting: USDA/FAS/OGA/IPAD



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Figure 1: Seasonal rainfall comparison: MY 2009/10 compared with the previous year and normal.

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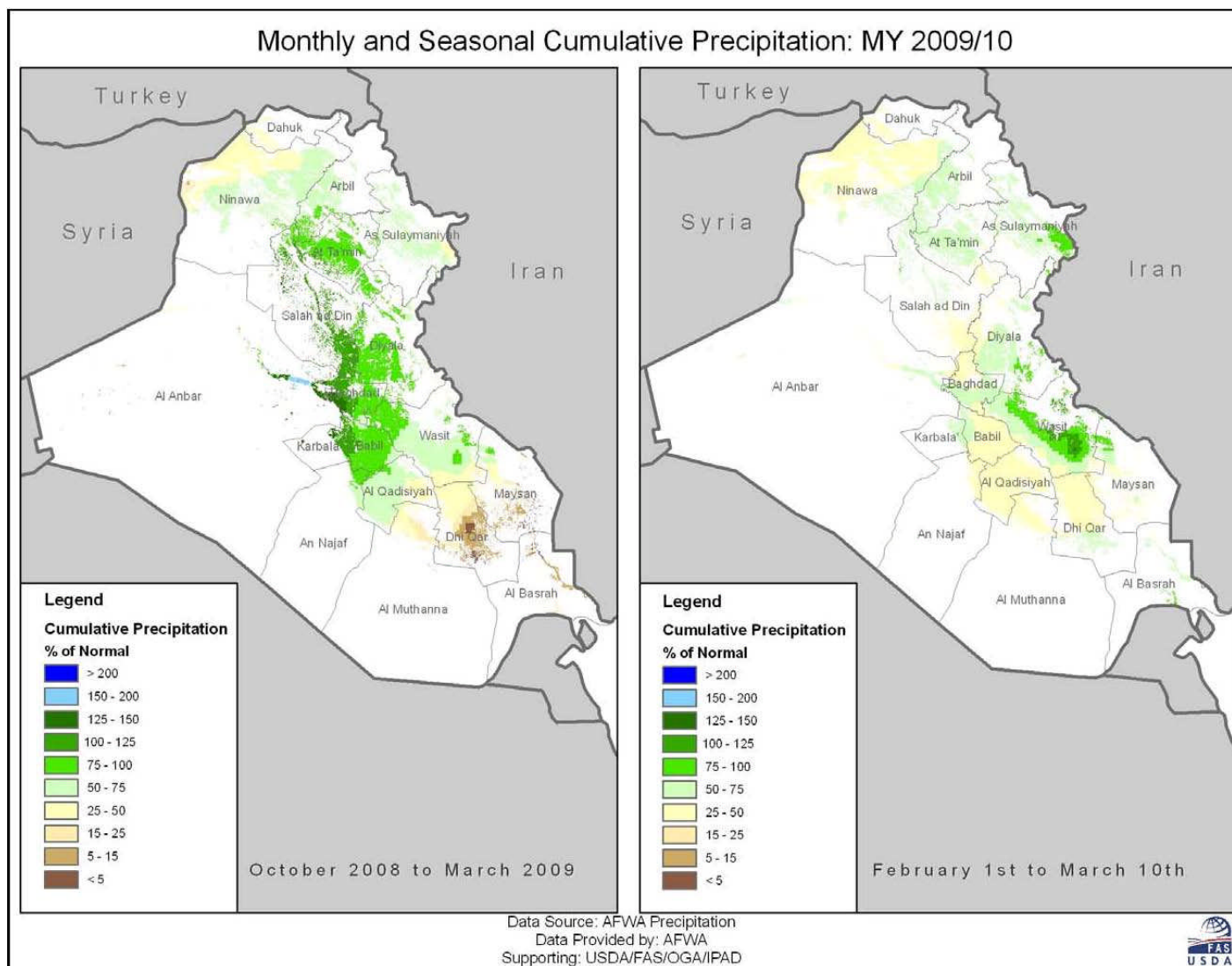


Figure 2: Season-to-date and monthly percent of normal cumulative precipitation for cropland areas.

MODIS NDVI Time Series: MY 2009/10 vs. MY 2006/07 Benchmark

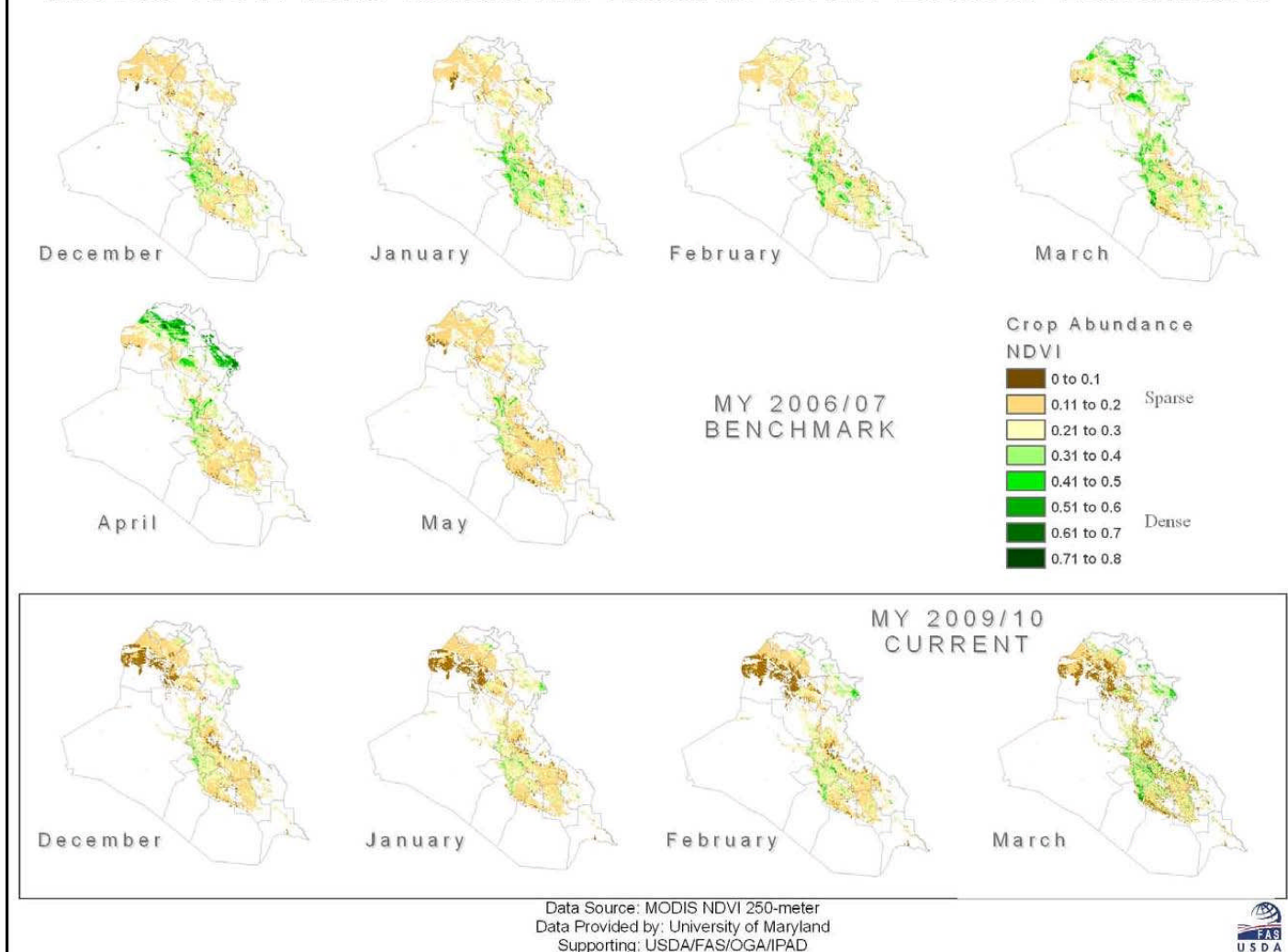


Figure 3: Regional perspective of seasonal NDVI: Current MY 2009/10 compared with benchmark year MY 2006/07.

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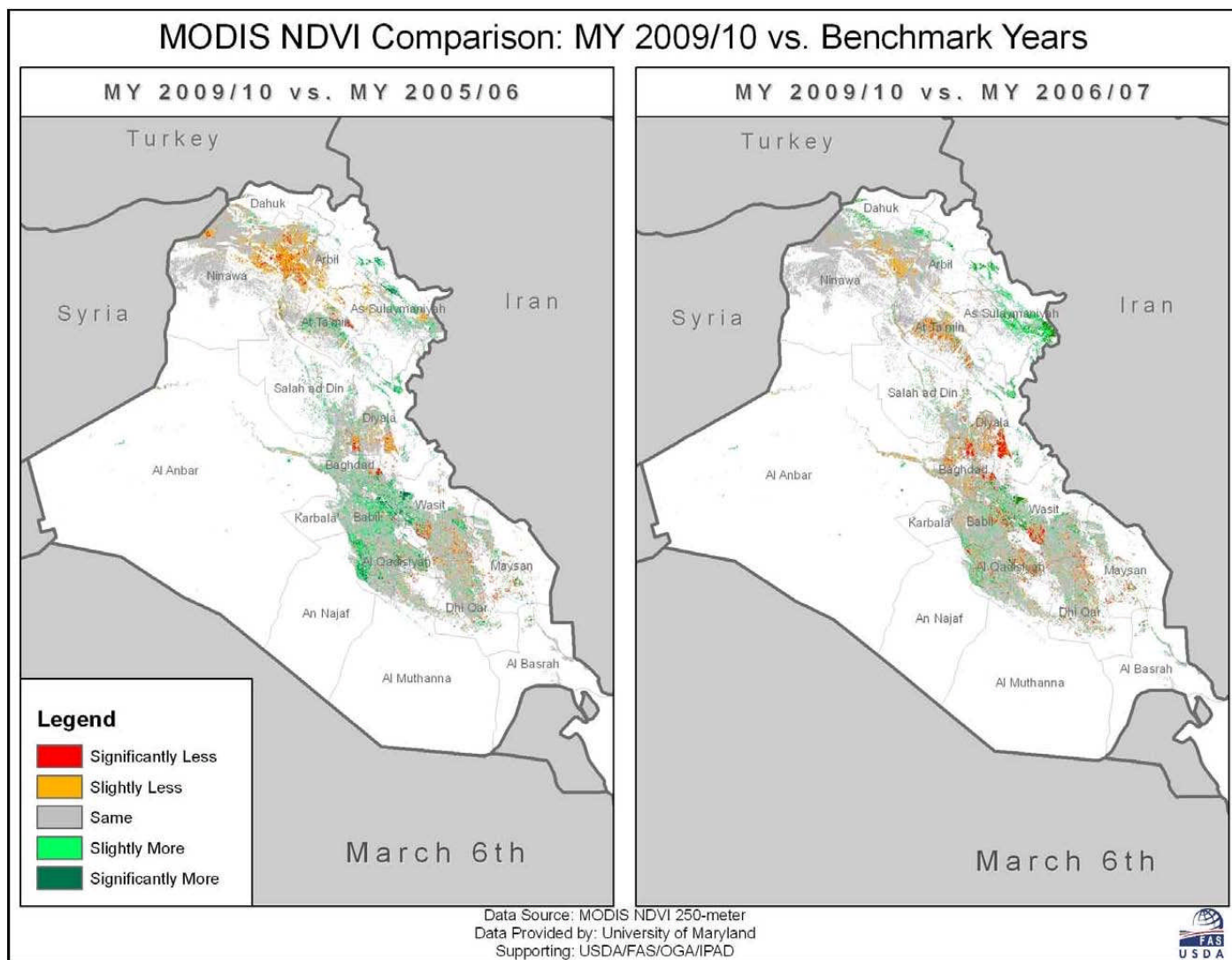


Figure 4: MODIS NDVI change analysis: Current MY 2009/10 compared with benchmark years MY 2005/06 and MY 2006/07.

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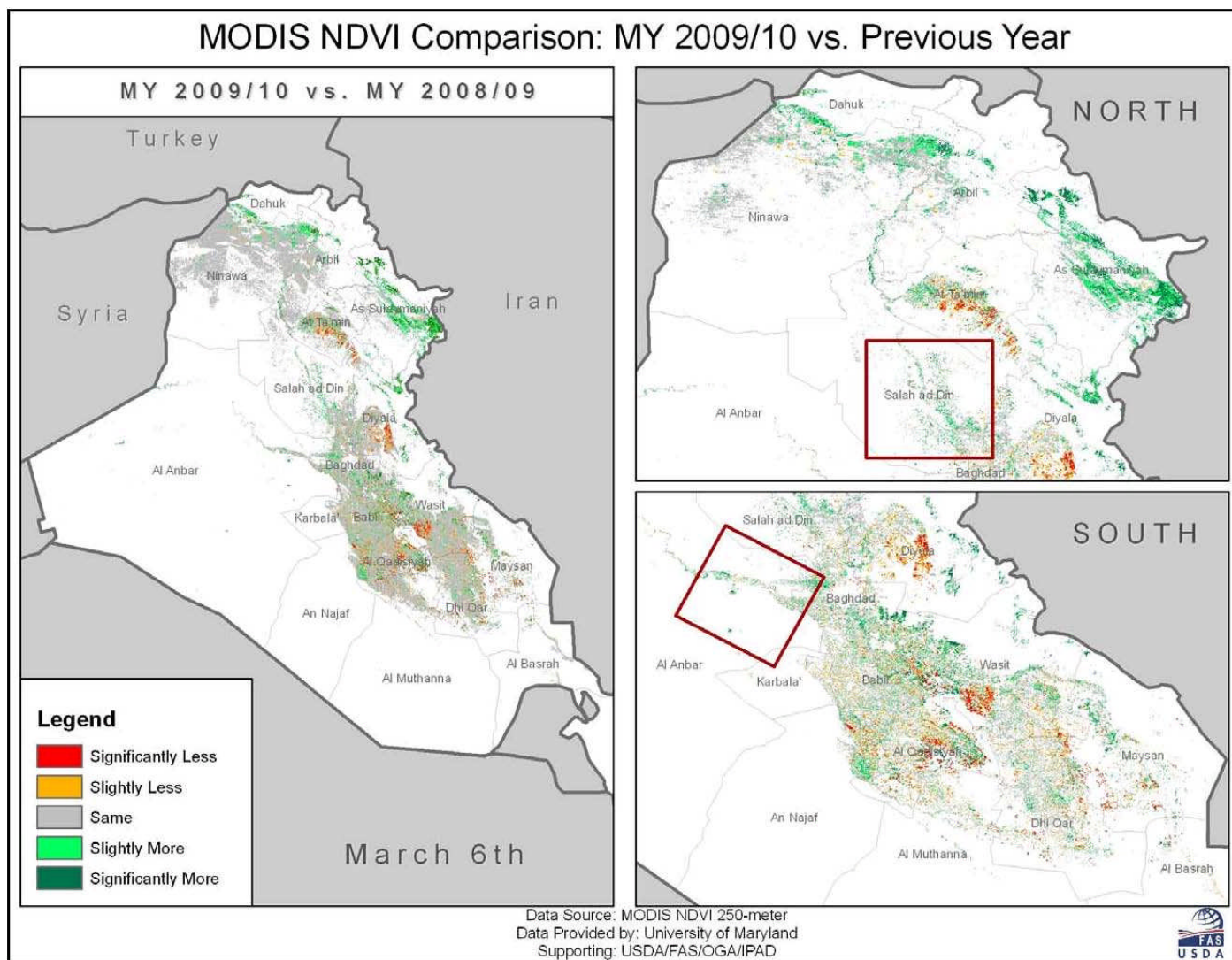


Figure 5: AWiFS NDVI change analysis: Current MY 2009/10 vs. previous MY 2008/09.

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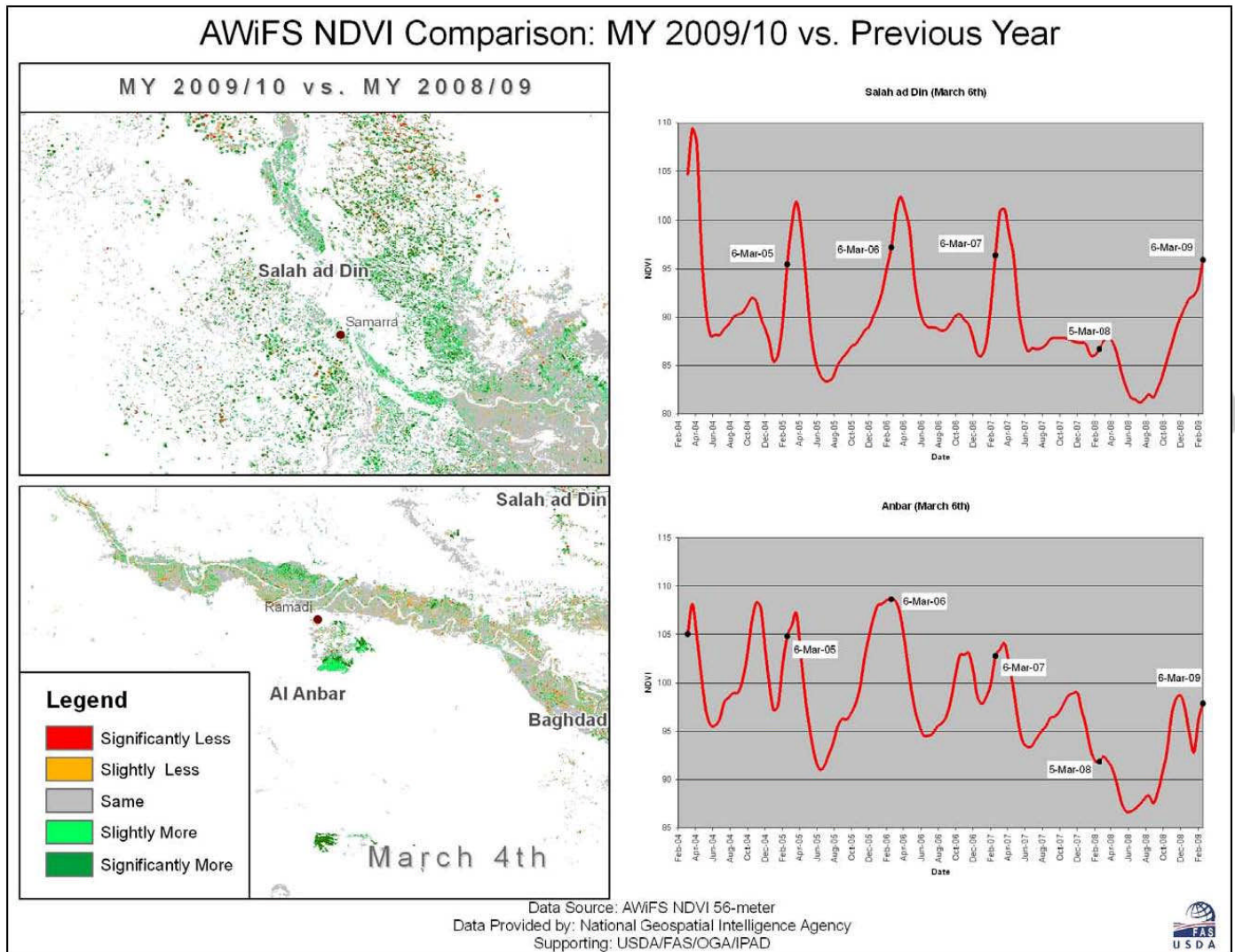
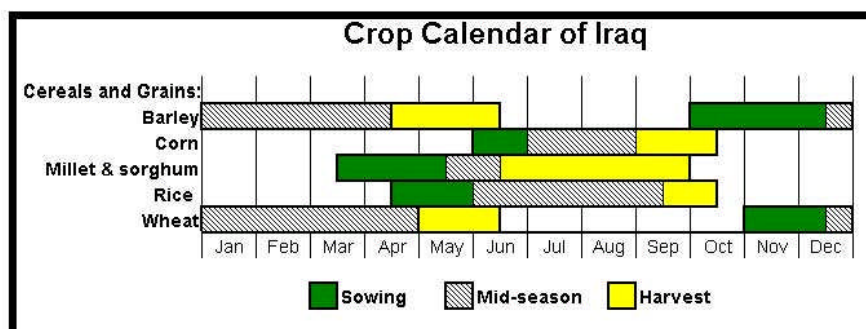
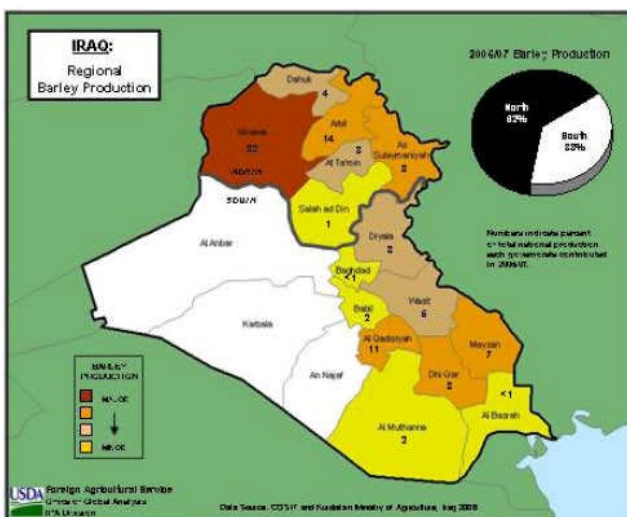
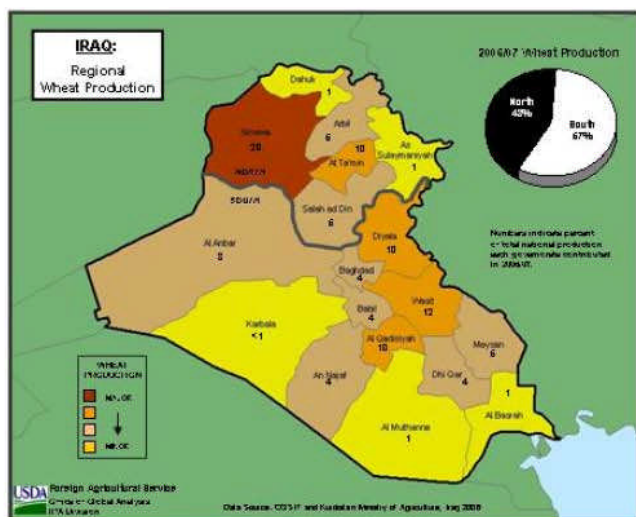


Figure 6: NDVI time-series analysis based on significant change hotspots in AWiFS NDVI: Salah ad Din and Al Anbar.

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APPENDIX



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